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Research summary:

My research goals are to understand the mechanisms of aging and reverse them in order to treat age-related diseases. I am passionate about creating a network of researchers collaborating at the nexus of aging to address the growing number of elderly people suffering from chronic diseases. We have demonstrated that a loss of epigenetic information causes molecular and physiological aging in mice. Following this, reprogramming to restore youthful epigenetic information can reverse biological age. Thus, by manipulating the epigenome, aging can be driven forward and backward. Using mouse models, aging-inducible human organoids, microfluidic organ-chips, and high-throughput aging screening platforms, I aim to study rejuvenation mechanisms and develop safe age reversal therapies that restore youthful epigenetic information and tissue function.

Keywords: Mechanisms of reverse aging; Epigenetic reprogramming; Organoids; Stem cells

Education:

08/2011 **Ph.D.**, School of Pharmacy, Sungkyunkwan University, Suwon, South Korea (Mentor: Eun-Jung Cho, Ph.D.)
02/2007 **M.S.**, School of Pharmacy, Sungkyunkwan University, Suwon, South Korea (Mentor: Eun-Jung Cho, Ph.D.)
02/2005 **B.S.**, Department of Biotechnology, Paichai University, South Korea

Professional experience:

12/2012-
2011-2012 **Postdoctoral fellow**, Harvard Medical School, Boston, MA, USA (Mentor: David A. Sinclair, Ph.D.)
2008-2009 **Postdoctoral fellow**, Sungkyunkwan University, Suwon, South Korea (Mentor: Eun-Jung Cho, Ph.D.)
2005-2006 **Teaching Assistant**, Sungkyunkwan University, South Korea
Research Assistant, Sungkyunkwan University, South Korea

Awards and honors:

11/2022 **Outstanding Research Award (Junior Research Scientist)**, Association of Korean Neuroscientist
12/2020 **Korea American Bioscience Forum 2020 NYKB Fellowship**, New York Korean Biologists
03/2018 **Epigenetics Initiative Travel Grants**, Department of Genetics, Harvard Medical School
04/2016 **Epigenetics Initiative Travel Grants**, Department of Genetics, Harvard Medical School
06/2014 **KASBP-Yuhan fellowship**, Korean American Society in Biotech and Pharmaceuticals
12/2012 **Postdoctoral fellowship**, Fostering Next-generation Researchers Program, NRF of Korea
05/2011 **KRIBB Best research award**, Korean Society for Biochemistry and Molecular Biology
2008-2010 **Brain Korea 21 scholarship**, Ministry of Education, Science and Technology
04/2007 **Poster award**, School of Pharmacy Research Day, Sungkyunkwan University
04/2006 **Presentation award**, School of Pharmacy Research Day, Sungkyunkwan University

Publications:

1. **JH Yang**, MV Lopez, Z Chen, N Ibrahim, X Tian, PT Griffin, DA Sinclair. An organoid model of brain aging and epigenetic drift (Manuscript in preparation)
2. **JH Yang**, JA Amorim, M Hayano, EK Nishimura, P Oberdoerffer, DA Sinclair. The Inducible Changes to the Epigenome (ICE) system to study DNA damage response, epigenetic alteration, and aging. (Manuscript in preparation)
3. **JH Yang**, C Petty, MV Lopez, N Ibrahim, S Maybury-Lewis, T Dixon-McDougall, Z Chen, PT Griffin, S Angeli, DA Sinclair. Chemically induced reprogramming to reverse cellular aging. (Manuscript in preparation)

4. **JH Yang***[#], M Hayano*, TP Griffin, JA Amorim, MS Bonkowski, JK Apostolides, EL Salfati, M Blanchette, EM Munding, M Bhakta, YC Chew, W Guo, X Yang, S Maybury-Lewis, X Tian, JM Ross, G Coppotelli, Meer MV, R Rogers-Hammond, Y Lu, JW Pippin, ML Creswell, Z Dou, C Xu, DL Vera, SJ Mitchell, A Das, BL O'Connell, S Thakur, A Kane, Q Su, Y Mohri, EK Nishimura, L Schaevitz, N Garg, A Balta, MA Rego, Gregory-Ksander M, Jakobs TC, Zhong L, Wakimoto H, Andari JE, Grimm D, Mostoslavsky R, Wagers AJ, K Tsubota, SJ Bonasera, C Palmeira, JG Seidman, CE Seidman, NS Wolf, JA Kreiling, JM Sedivy, GF Murphy, RE Green, BA Garcia, SL Berger, P Oberdoerffer, SJ Shankland, VN Gladyshev, BR Ksander, AR Pfenning, LA Rajman, DA Sinclair[#]. Loss of epigenetic information as a cause of mammalian aging. *Cell* 2023 Jan 19;186(2):305-326
[**JH Yang: Co-first & co-corresponding author, 2021 IF: 66.85**]
 - Research highlights:
 - *Nature aging*, Loss of epigenetic information drives aging
 - *Cell Metabolism*, Putting aging on ICE
 - *Science*, Two research teams reverse signs of aging in mice
 - *Signal Transduction and Targeted Therapy*, The loss of epigenetic information: not only consequences but a cause of mammalian aging
 - *TIME*, Scientists Have Reached a Key Milestone in Learning How to Reverse Aging
 - *CNN*, Old mice grow young again in study. Can people do the same?
 - *THE SCIENTIST*, Epigenetic Manipulations Can Accelerate or Reverse Aging in Mice
 - *Harvard Medical School*, Loss of Epigenetic Information Can Drive Aging, Restoration Can Reverse It
 - *The Harvard Gazette*, Has first person to live to be 150 been born?
 - *Boston Globe*, New research points to a way to reverse aging. But don't expect a miracle drug overnight
 - *Yale Scientific Magazine*, Turning Back the Clock
 - *Chosun Biz*, [사이언스카페] 하버드대 한인 과학자, 회춘의 새로운 길 찾았다
5. HJ Lim, YH Baek, MY Park, **JH Yang**, MJ Kim, N Sung, YH Sohn, SH Lee, JE Park, YJ Yang. Performance Analysis of Self-Collected Nasal and Oral Swabs for Detection of SARS-CoV-2. *Diagnostics* 2022 Sep 21;12(10):2279 [Co-author, 2021 IF: 3.992]
6. YH Baek, MY Park, HJ Lim, HS Jung, **JH Yang**, YH Sohn, SH Lee, JE Park, YJ Yang. Evaluation of Alternative Transport Media for RT-qPCR-Based SARS-CoV-2 Testing. *Int J Anal Chem* 2022 Aug 10;2022:5020255 [Co-author, 2021 IF: 1.698]
7. HJ Lim, HS Jung, MY Park, YH Baek, B Kannappan, JY Park, **JH Yang**, JH Seol, MH Lee, SK Jung, SH Lee, JE Park, YJ Yang. Evaluation of Three Automated Extraction Systems for the Detection of SARS-CoV-2 from Clinical Respiratory Specimens. *Life* 2022 Jan 4;12(1):68 [Co-author, 2021 IF: 3.251]
8. HJ Lim, ER Kang, MY Park, BK Kim, MJ Kim, S Jung, KH Roh, N Sung, **JH Yang**, MW Lee, SH Lee, YJ Yang. Development of a multiplex real-time PCR assay for the simultaneous detection of four bacterial pathogens causing pneumonia. *PLoS One* 2021 Jun 17;16(6):e0253402 [Co-author, 2021 IF: 3.752]
9. HJ Lim, JE Park, MY Park, JH Baek, S Jung, N Sung, **JH Yang**, MW Lee, SH Lee, YJ Yang. Assay System for Simultaneous Detection of SARS-CoV-2 and Other Respiratory Viruses. *Diagnostics* 2021 Jun 13;11(6):1084 [Co-author, 2021 IF: 3.992]
10. Y Lu, B Brommer, X Tian, A Krishnan, M Meer, C Wang, DL Vera, Q Zeng, D Yu, MS Bonkowski, **JH Yang**, S Zhou, EM Hoffmann, MM Karg, MB Schultz, AE Kane, N Davidsohn, E Korobkina, K Chwalek, LA Rajman, GM Church, K Hochedlinger, VN Gladyshev, S Horvath, ME Levine, MS Gregory-Ksander, BR Ksander, Z He, DA Sinclair. Reprogramming to recover youthful epigenetic information and restore vision. *Nature* 2020 Dec 2;588(7836):124-129 [Co-author, 2020 IF: 49.962]
11. J Park, H Lee, N Han, S Kwak, HT Lee, JH Kim, K Kang, BH Youn, **JH Yang**, HJ Jeong, JS Kang, SY Kim, JW Han, HD Youn, EJ Cho. Long noncoding RNA ChRO1 facilitates DAXX-dependent H3.3 deposition for transcription-associated heterochromatin reorganization. *Nucleic Acids Res* 2018 Dec 14;46(22):11759-11775 [Co-author, 2018 IF: 11.147]
12. **JH Yang***, TY Song*, C Jo*, J Park, HY Lee, I Song, S Hong, KY Jung, J Kim, HD Youn, JW Han, EJ Cho. Differential regulation of the histone chaperone HIRA during muscle cell differentiation by a phosphorylation switch. *Exp Mol Med* 2016 Aug 12;48(8):e252 [**JH Yang: Co-first author, 2016 IF: 5.063**]
13. JH Seol, TY Song, SE Oh, C Jo, A Choi, B Kim, J Park, S Hong, I Song, KY Jung, **JH Yang**, H Park, JH Ahn, JW Han, EJ Cho. Identification of small molecules that inhibit the histone chaperone Asf1 and its chromatin function. *BMB Rep* 2015 Dec;48(12):685-690 [Co-author, 2015 IF: 2.782]
14. Y Song, JH Seol, **JH Yang**, HJ Kim, JW Han, HD Youn, EJ Cho. Dissecting the roles of the histone chaperones reveals the evolutionary conserved mechanism of transcription-coupled deposition of H3.3. *Nucleic Acids Res* 2013 May 1;41(10):5199-209 [Co-author, 2013 IF: 9.112]

15. YJ Yang, TY Song, J Park, J Lee, J Lim, H Jang, YN Kim, **JH Yang**, Y Song, A Choi, HY Lee, CH Jo, JW Han, ST Kim, HD Youn, EJ Cho. Menin mediates epigenetic regulation via histone H3 lysine 9 methylation. *Cell Death Dis* 2013 Apr 11;4(4):e583 [Co-author, 2013 IF: 5.177]
16. TY Song, **JH Yang**, JY Park, Y Song, JW Han, HD Youn, EJ Cho. The role of histone chaperones in osteoblastic differentiation of C2C12 myoblasts. *Biochem Biophys Res Commun* 2012 Jul 13;423(4):726-732 [Co-author, 2013 IF: 2.281]
17. **JH Yang**, JH Choi, H Jang, JY Park, JW Han, HD Youn, EJ Cho. Histone chaperones cooperate to mediate Mef2-targeted transcriptional regulation during skeletal myogenesis. *Biochem Biophys Res Commun* 2011 Apr 15;407(3):541-547 [**JH Yang: First author, 2011 IF: 2.484**]
18. **JH Yang**, Y Song, JH Seol, JY Park, YJ Yang, JW Han, HD Youn, EJ Cho. Myogenic transcriptional activation of *MyoD* mediated by replication-independent histone deposition. *Proc Natl Acad Sci U S A* 2011 Jan 4;108(1):85-90 [**JH Yang: First author, 2011 IF: 9.681**]

Talks:

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| 05/2023 | Evidence for forward and reverse aging via epigenetic manipulation Department of Biomedical Engineering Colloquium, UNIST, Ulsan, Korea |
| 05/2022 | Evidence for forward and reverse aging via epigenetic manipulation TEU (TIDE Envision University)-MED 3, (virtual lecture) |
| 03/2023 | Loss of epigenetic information as a cause of mammalian aging Stochastic Stemness Research Center, College of Medicine, Seoul National University (virtual) |
| 03/2023 | Loss of epigenetic information as a cause of mammalian aging College of Medicine, Korea University (virtual) |
| 02/2023 | Loss of epigenetic information as a cause of mammalian aging 300th New England Bioscience Society (NEBS) monthly meeting, Boston, MA, USA |
| 02/2023 | Loss of epigenetic information as a cause of mammalian aging School of Biological Sciences, Seoul National University (virtual) |
| 02/2023 | Loss of epigenetic information as a cause of mammalian aging Department of Microbiology & Immunology, College of Medicine, Seoul National University (virtual) |
| 01/2023 | Loss of epigenetic information as a cause of mammalian aging College of Medicine, Yonsei University (virtual) |
| 09/2022 | Evidence for epigenetic drift as a reversible cause of aging The 31st International KOGO Annual Conference (virtual) |
| 09/2022 | Evidence for epigenetic drift as a reversible cause of aging Data & Journal Club, Department of Genetics, Harvard Medical School, Boston, MA, USA |
| 06/2022 | The epigenetics of aging — how to reset the aging clock 2022 UST Global Mentoring Conference, (virtual mentoring) |
| 05/2022 | The epigenetics of aging TEU (TIDE Envision University)-MED 2, (virtual lecture) |
| 02/2022 | Evidence for epigenetic drift as a reversible cause of aging 2022 SKKU-GSBMS International Symposium(Metabolism, Aging, Mitochondria, and AI), (virtual) |
| 11/2021 | The epigenetics of aging: why and how we age TEU (TIDE Envision University)-MED 1, (virtual lecture) |
| 08/2021 | Loss of epigenetic information as a cause of mammalian aging NEBS-Seoul National University College of Medicine joint symposium (virtual) |
| 07/2021 | Loss of epigenetic information as a cause of mammalian aging NEBS-Yonsei University College of Medicine joint seminar (virtual) |
| 07/2021 | Faithful DNA repair causes the erosion of the epigenetic landscape and aging NEBS-Seoul National University College of Pharmacy joint symposium (virtual) |
| 12/2020 | Loss of epigenetic information as a cause of mammalian aging KOREAN-AMERICAN BIOSCIENCE FORUM 2020 (virtual) |

- 09/2020 **DNA break-induced loss of epigenetic information as a cause of mammalian aging**
Mechanisms of Aging - Cold Spring Harbor Laboratory (virtual)
- 11/2019 **DNA break-induced epigenetic drift as a cause of mammalian aging**
Data & Journal Club, Department of Genetics, Harvard Medical School, Boston, MA, USA
- 11/2019 **Erosion of the epigenetic landscape and loss of cellular identity as a cause of aging in mammals**
Fifth Annual Northeastern Glenn Symposium on the Biology of Aging, Farmington, CT, USA
- 10/2019 **DNA break-induced epigenetic drift as a cause of mammalian aging**
ASHG 2019 (American Society of Human Genetics) CoLab, Houston, Tx, USA
- 08/2019 **Loss of epigenetic information as a cause of mammalian aging**
Korea Institute of Oriental Medicine, Daegu, South Korea
- 08/2019 **Loss of epigenetic information as a cause of mammalian aging**
Graduate School of Medical Science and Engineering, KAIST, Daejeon, South Korea
- 08/2019 **Loss of epigenetic information as a cause of mammalian aging**
Department of Biomedical Engineering, School of Life Sciences, UNIST, Ulsan, South Korea
- 08/2019 **Loss of epigenetic information as a cause of mammalian aging**
School of Pharmacy, Sungkyunkwan University, Suwon, South Korea
- 08/2019 **Loss of epigenetic information as a cause of mammalian aging**
School of Medicine, Kyungpook National University, Daegu, South Korea
- 08/2019 **Loss of epigenetic information as a cause of mammalian aging**
College of Medicine, Ajou University, Suwon, South Korea
- 09/2017 **Evidence for epigenetic change as a cause of mammalian aging**
Data & Journal Club, Department of Genetics, Harvard Medical School, Boston, MA, USA
- 05/2016 **Evidence for epigenomic change as a cause of mammalian aging**
Keystone Symposia, Epigenetic and Metabolic Regulation of Aging (E1), Santa Fe, NM, USA
- 08/2015 **Evidence for histone depletion as a cause of mammalian aging**
Data & Journal Club, Department of Genetics, Harvard Medical School, Boston, MA, USA
- 01/2011 **Myogenic transcriptional activation of *MyoD* mediated by RI histone deposition**
Chromatin & Epigenetics symposium, KSBMB, Hongcheon-gun, South Korea
- 01/2009 **Histone chaperone HIRA regulates *MyoD* during muscle differentiation**
Chromatin & Epigenetics symposium, KSBMB, Hongcheon-gun, South Korea
- 11/2006 **Transcriptional Regulation by Histone Chaperone HIRA during Myogenesis**
School of Pharmacy Research Day, Sungkyunkwan University, Suwon, South Korea

Posters:

- 11/2022 **DNA break-induced loss of epigenetic information as a cause of neuronal aging**
Society for Neuroscience (SfN 2022), San Diego, CA, USA
- 09/2022 **Evidence for loss of epigenetic information as a reversible cause of aging in mammals**
Mechanisms of Aging - Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA
- 10/2020 **DNA break-induced epigenetic drift as a cause of neuronal aging**
Neuroepigenetics: From Cells to Behaviour and Disease-EMBO (virtual)
- 10/2020 **Loss of epigenetic information as a cause of mammalian aging**
2020 KASBP Fall eSymposium (virtual)
- 05/2020 **DNA break-induced loss of epigenetic information leads to aging in mammals**
Genome Organization & Nuclear Function-Cold Spring Harbor Laboratory (virtual)
- 11/2019 **DNA Break-Induced Epigenetic Drift as a Cause of Mammalian Aging**
Korean American Society in Biotech and Pharmaceuticals Fall Symposium, Andover, MA, USA
- 11/2018 **Evidence that epigenetic alterations drive mammalian aging**
GSA's 2018 Annual Scientific Meeting, Boston, MA, USA
- 09/2018 **Evidence for epigenetic noise and loss of cell identity as a cause of aging**
Mechanisms of Aging - Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA

- 07/2018 **Evidence for epigenetic change as a cause of mammalian aging**
Gordon Research Conference on Chromatin Structure and Function, Newry, ME, USA
- 09/2016 **Evidence for epigenomic change as a cause of mammalian aging**
Mechanisms of Aging - Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA
- 05/2016 **Evidence for epigenomic change as a cause of mammalian aging**
Keystone Symposia, Epigenetic and Metabolic Regulation of Aging (E1), Santa Fe, NM, USA
- 12/2014 **Evidence That The Cellular Response to Broken DNA Drives the Chromatin and Gene Expression Changes during Aging**
HMS Epigenetics Symposium, Boston, MA, USA
- 09/2014 **Evidence that the cellular response to broken DNA drives the chromatin and gene expression changes during aging**
Molecular Genetics of Aging - Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA
- 07/2014 **A new driver of aging: the reorganization of chromatin structure**
Korean American Society in Biotech and Pharmaceuticals Spring Symposium, Edison, NJ, USA
- 06/2012 **The role of HIRA phosphorylation in H3.3 incorporation**
The 12th Asian Conference on Transcription, Jeju, South Korea
- 05/2011 **Histone chaperones cooperate to mediate Mef2-targeted transcriptional regulation during skeletal myogenesis**
The Korean Society for Biochemistry and Molecular Biology, Seoul, South Korea
- 05/2010 **Myogenic activation of *MyoD* with variant histone H3.3**
CSH Asia Conference: Epigenetics, Chromatin & Transcription, Suzhou, China
- 10/2009 **Histone chaperone HIRA regulates *MyoD* expression during muscle differentiation**
The Korean Society for Molecular and Cellular Biology, Seoul, South Korea
- 10/2008 **Myogenic regulation of muscle specific genes by histone chaperones**
ASBMB, Transcriptional Regulation by Chromatin and RNA Polymerase II, Tahoe City, CA, USA
- 10/2006 **Myogenic regulation by histone chaperone HIRA**
The Korean Society of Medical Biochemistry and Molecular Biology, Seoul, South Korea

Research projects:

- 2012-2022 Role of epigenetic decay in cell senescence and aging (5R01AG019719),
National Institute on Aging, \$2,972,204, Co-investigator
- 2012-2023 Research fund (06775092-01),
Glenn Foundation for Medical Research, \$2,000,000, Co-investigator
- 2012-2021 SIRT1 as a regulator of health and lifespan of mammals (5R37AG028730),
National Institute on Aging, \$4,128,877, Co-investigator

Editorial activities:

- 11/2022- Editorial board (Review editor), *Frontiers in Aging*
- 02/2022 Co-reviewer, *Nature*
- 05/2021 Co-reviewer, *Cell Reports*
- 04/2020 Co-reviewer, *Trends in Genetics*
- 03/2018 Co-reviewer, *Cell Metabolism*
- 09/2016 Co-reviewer, *Molecular Cell*
- 08/2016 Co-reviewer, *Molecular Cell*
- 04/2016 Co-reviewer, *Science Advances*
- 03/2016 Co-reviewer, *Molecular Cell*
- 02/2016 Co-reviewer, *eLife*
- 02/2015 Co-reviewer, *BMC Genomics*
- 10/2013 Co-reviewer, *Current Biology*

Professional memberships:

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| 2022- | Society for Neuroscience |
| 2019-2021 | Korean American Society in Biotech and Pharmaceuticals |
| 2018-2019 | The Gerontological Society of America |
| 2014-2015 | Korean American Society in Biotech and Pharmaceuticals |
| 2009-2012 | Korean Society for Biochemistry and Molecular Biology |
| 2008-2012 | Korean Society for Molecular and Cellular Biology |
| 2007-2012 | The Pharmaceutical Society of Korea |

Workshops and courses:

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| 10/2018-02/2019 | Introduction to 'Omics' Research, The Harvard Catalyst Education Program |
| 06-08/2018 | Funding Your Research: NIH, Harvard Catalyst Postgraduate Education |
| 08/2018 | Pathway Analysis of Genomic data using MetaCore, Harvard Medical School |
| 06/2018 | Introduction to ChIP-Seq and data analysis using Galaxy, Harvard Medical School |
| 05/2018 | Genome Engineering 2018, Broad Institute, Boston, MA, USA |
| 04-05/2018 | Introduction to R, Harvard Chan Bioinformatics Core |
| 07/2017 | Imaging Solutions for Scientific Communication, Harvard Medical School |
| 09/2015 | Intro to R/Bioconductor, Harvard Medical School |
| 08/2015 | Bioinformatics summer course Cell Profiler, Harvard Medical School |
| 05/2015 | Genome Engineering 3.0, Broad Institute |
| 05/2015 | MetaCore "omics" analysis, HMS/HSDM Office for Postdoctoral Fellows |
| 03/2015 | ChIP-seq analysis, Harvard School of Public Health Bioinformatics Core |
| 11/2014 | NGS Data: Standard data processing and workflow analysis, Harvard Medical School |
| 05/2014 | HMS ChIP-Seq Workshop, HMS/HSDM Office for Postdoctoral Fellows |
| 04/2014 | mRNA-seq analysis using JMP Genomics software, Harvard Medical School |

Mentorship:

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| 01/2023- | Yashi Singh (Northeastern University), co-op student in the Sinclair lab |
| 08/2022-04/2023 | Nabilah Ibrahim (Northeastern University), co-op student in the Sinclair lab |
| 07/2022-04/2023 | Zhili Chen (Zhejiang University), student intern in the Sinclair lab |
| 06-08/2022 | Sally Tabakh (Noble and Greenough School), HMS Genetics DEI Internship Program |
| 01-08/2022 | Maria Vina Lopez (University of Maine), student intern in the Sinclair lab |
| 10-12/2019 | Kejun Ying (Harvard University), rotation student in the Sinclair lab |
| 04-06/2018 | Alex Plesa (Harvard Medical School), rotation student in the Sinclair lab |
| 01-12/2018 | Patrick Griffin (Harvard Medical School), graduate student in the Sinclair lab |
| 01-12/2017 | Yuancheng Lu (Harvard Medical School), graduate student in the Sinclair lab |
| 05-08/2017 | Phillip Dmitriev (University of Florida), summer student in the Sinclair lab |
| 01-02/2016 | Andrew Kane (Harvard University), rotation student in the Sinclair lab |
| 05-08/2015 | Sarah Hemphill (Middlebury College), summer student in the Sinclair lab |

References:

| | |
|--------------------------------|---|
| David A. Sinclair, A.O., Ph.D. | Co-Director, Paul F. Glenn Center for Biology of Aging Research Professor, Department of Genetics – Blavatnik Institute, Harvard Medical School 77 Avenue Louis Pasteur, NRB-931B, Boston, MA 02115, USA Email: david_sinclair@hms.harvard.edu |
| Eun-Jung Cho, Ph.D. | Professor, School of Pharmacy, Sungkyunkwan University Seoburo 2066, Jangan-gu, Suwon, Gyeonggi-do 16419, Republic of Korea Email: echo@skku.edu |
| Vadim N. Gladyshev, Ph.D. | Professor of Medicine, Harvard Medical School Director, Center for Redox Medicine, Brigham And Women's Hospital 77 Avenue Louis Pasteur, NRB-435, Boston, MA 02115, USA Email: vgladyshev@rics.bwh.harvard.edu |